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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,346	04/29/2004	David D. Needelman	03-0196 (BOE 0459 PA)	3345

27256 7590 02/16/2006

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EXAMINER

BEAULIEU, YONEL

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/709,346

Applicant(s)

NEEDELMAN ET AL.

Examiner

Yonel Beaulieu

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/29/04&6/21/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

Claim Rejections - 35 USC § 112

Claims 1 - 29 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 10, "...a bright object or a plurality of objects..." (line 4 in claim 1 and lines 3-4 in claim 10) is not understood. It is not clear as to the 'bright object' is different than the 'plurality of objects.'

Claims that are dependent upon the claims 1 and 10 are necessarily rejected.

Regarding claim 21, it is not readily clear whether the determined vehicle *inertial* attitude (step g) is the same as a specific vehicle attitude (as established at line 1).

Any claims linking claim 21 are necessarily rejected.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 20, 30, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Bender et al. (US 5,412,574).

Regarding claims 1, 9, 10, 18 - 20, and 30, Bender teaches a method of determining a vehicle attitude or angular velocity, comprising: calculating (using algorithm in processor 14), on-board the vehicle (the vehicle being spacecraft 100; col. 7, lines 16 – 20 at least), a stayout zone associated with a bright object, or a plurality of objects and determining a star in the stayout zone (see figs. 3a and 3b; col. 5, lines 38 – 63 at least); and determining a vehicle inertial attitude or angular velocity, based on star measurements of sensed or tracked stars (tracked by item 12; col. 4, lines 25 – 41 at least), excluding (separating) the star within the stayout zone (col. 4, line 66 – col. 5, line 33); Bender further teaches listing the stars inside the zone (based on star ID) and flagging a star catalog (22; see fig. 2; col. 4, lines 1 – 35 at least).

Regarding claims 2, 3, 11 and 12, Bender's teaching further comprises a circular stayout zone (considering orbital path of spacecraft 100 as illustrated in fig. 1a; col. 3, lines 13 – 18 at least) and a non-circular stayout zone (col. 8, lines 23 – 39 at least).

Regarding claims 4, 5, 13, and 14, Bender's exclusion is performed for a fixed and non-fixed period of time (col. 8, lines 40 – 54).

Regarding claims 6 and 15, Bender further teaches the exclusion of a star being based upon the properties of the star or the object (Bender teaches which star to detect and determines which to track; col. 4, lines 10 – 16 at least).

Regarding claims 7 and 16, Bender further teaches orientation determination of the star trackers (col. 3, lines 57 – 68; col. 5, lines 55 – 63; and col. 6, lines 18 – 22 at least).

Regarding claims 8 and 17, Bender further teaches controlling the vehicle attitude in response to the vehicle inertial attitude or velocity (to place item 100 in orbit inherently requires a minimum angular orbital velocity; note col. 5, lines 5 – 32 at least).

Allowable Subject Matter

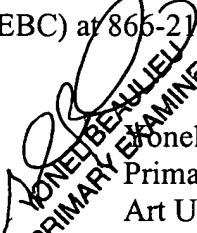
Claims 21 - 29 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action (a statement of reasons pending clarification will then be provided).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yonel Beaulieu whose telephone number is (571) 272-6955. The examiner can normally be reached on M-W 9-3; F 9-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas BLACK can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ronel Beaulieu
Primary Examiner
Art Unit 3661